Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Upper C-band (3.98 to 4.2 GHz)	)	GN Docket No. 25-59
	)	

ERICSSON REPLY COMMENTS

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Ericsson submits these reply comments in response to the record developed in the Federal Communications Commission's ("FCC" or "Commission") proceeding to repurpose Upper C-band spectrum (the 3.98-4.2 GHz band) for terrestrial wireless services.[1]

I. INTRODUCTION AND SUMMARY.

The record in this proceeding continues to highlight and reinforce four key points: (1) the FCC should maximize the amount of Upper C-band spectrum repurposed for terrestrial wireless use in order to advance American consumer, U.S. economic, and national security interests; (2) post-transition, incumbent Fixed Satellite Service ("FSS") users can enjoy substantially the same service they have today, given new technologies and alternative transmission methods; (3) the Upper C-band transition process will be most successful if the government sets a firm transition timeline without undue delay after the auction; and (4) aligning the technical and service rules across the C-band will create efficiencies and expedite deployments.

[1] *Upper C-band (3.98 to 4.2 GHz)*, Notice of Proposed Rulemaking, FCC 25-78 (rel. Nov. 21, 2025) ("*Notice of Proposed Rulemaking*" or "*NPRM*").

II. THE RECORD OVERWHELMINGLY SUPPORTS REPURPOSING AS MUCH UPPER C-BAND SPECTRUM AS FEASIBLY POSSIBLE FOR TERRESTRIAL WIRELESS USE.

Commenters affirmed the underlying premise of the *NPRM* – namely, the Commission should repurpose as much Upper C-band spectrum for terrestrial wireless use as possible, while ensuring that incumbent users of the band and adjacent band radio altimeter operations are addressed.

As the record denotes, there are substantial benefits to repurposing as much of the Upper C-band as possible.[2] The Upper C-band is mid-band spectrum that sits in the critical range of frequencies that provide a complementary balance of propagation and capacity.[3] The band is internationally harmonized,[4] and it is adjacent to the Lower C-band with its expansive 5G deployments.[5] Further, it can be licensed on an unpaired basis with wide-band channelization, which are both key attributes for next-generation wireless services.[6] Each of these factors support the repurposing of as much of the Upper C-band as technically feasible.

The need could not be greater as the United States faces a shortage of licensed, full-power, mid-band spectrum. Wireless data usage is on track to nearly double every two years.[7] As T-Mobile noted, "[n]umerous reports estimate a substantial increase in mobile data traffic

[2] *NPRM* ¶ 16.

[3] *See, e.g.*, Comments of Competitive Carriers Association, WT Docket No. 25-59 at 1 (filed Jan. 20, 2026) (noting that mid-band spectrum such as the Upper C-band "offers an optimal balance of coverage and capacity"). Unless otherwise noted, all citations are references to comments filed in response to the *NPRM* in WT Docket No. 25-59 on or about January 20, 2026.

[4] Comments of AT&T Services, Inc. at 3; Comments of Cisco Systems, Inc. at 7; Comments of CTIA at 5.

[5] Comments of AT&T Services, Inc. at 3; Comments of CTIA at 6.

[6] Comments of AT&T Services, Inc. at 3; Comments of Cisco Systems, Inc. at 7; Comments of T-Mobile USA, Inc. at 3-4.

[7] Comments of Verizon at 4.

rates" owing to factors such as increased adoption of artificial intelligence ("AI").[8] Wireless providers have rapidly deployed mid-band spectrum, which has helped address demand, directly and indirectly created jobs, increased competition in the broadband marketplace, and provided other economic benefits to American consumers and businesses.[9] Repurposing the Upper C-band is the next step, as the Administration and Congress recognized. Indeed, as NTIA observed, "repurposing spectrum for terrestrial wireless services will yield significant economic benefit by enabling enhanced mobile broadband, fostering innovation, and supporting the growing demand for data-driven applications."[10]

Repurposing the Upper C-band will also promote national security through the advancement of secure and trusted communications networks and equipment.[11] As the Commission is well aware, the dry spectrum well of the past several years created a leadership vacuum that allowed China to advance its own economic interests and security prerogatives at home and abroad through exports of its equipment to other countries.[12]

Notably, beyond wireless interests, stakeholders representing incumbent FSS and adjacent band radio altimeters ("RAs") also support repurposing up to 180 megahertz of Upper C-band spectrum. SES, by far the largest Upper C-band satellite operator responsible for

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[8] Comments of T-Mobile USA, Inc. at 1, n.3. OTI and Public Knowledge argue that the global growth rate for mobile data demand is "slowing." *See* Comments of Open Technology Institute at New America and Public Knowledge at 13. But OTI and Public Knowledge neither acknowledge nor dispute that, according to Ericsson data, global mobile network traffic (by exabytes per month) continues to increase quarter-over-quarter and year-over-year, and mobile data traffic per active smartphone in North America is projected to double from 25 GB per month in 2025 to 49 GB per month in 2031. *See* Comments of Ericsson at 3 (*citing* Ericsson, *Ericsson Mobility Report* at 13-14 (Nov. 2025)).

[9] *See, e.g.*, Comments of Verizon at 4-5.

[10] Comments of NTIA at 2-3.

[11] *See* Comments of AT&T Services, Inc. at 1 (explaining that "freeing additional mid-band spectrum for terrestrial services is necessary . . . advance our national security interests . . . ."); Comments of Digital Progress Institute at 1 (agreeing with FCC Chairman Carr that "'[r]estoring U.S. leadership in wireless is key to the nation's economic and national security interests'"); Comments of Cisco at 1-2; Comments of Nokia at 2-3.

[12] Comments of Digital Progress Institute at 3-5.

distribution of over 95% of all video content using the band,[13] outlined a plan to clear 180 megahertz of the band (160 megahertz for terrestrial wireless service and 20 megahertz for a guard band).[14] As with the Lower C-band, Ericsson prefers that a similar guard band of 20 megahertz be used to allow reasonable separation distances from FSS Earth Station receivers. Aviation interests also have been collaborating with wireless stakeholders in a good-faith effort to maximize spectrum availability for mobile services.[15]

III. DATA SHOW THAT CURRENT FSS USERS' OPERATIONS CAN BE MAINTAINED THROUGH A MIX OF REMAINING UPPER C-BAND SPECTRUM, KU-BAND SATELLITE CONNECTIVITY, AND FIBER.

Commenters established that FSS users' needs can be met even after maximizing the amount of Upper C-band spectrum to be repurposed for terrestrial wireless use. As an initial matter, Verizon recounted that the Commission has previously determined – in the context of the *SES/Intelsat Order* – that there is "'substantial excess North American C-band capacity.'" [16] Ericsson concurs with commenters who have advocated for the FCC to gather additional information on the current state of FSS operations in the Upper C-band, as doing so will provide further data on the state of Upper C-band use by FSS operators and techniques available to make more efficient use of the resource.[17]

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[13] *See Applications of SES S.A. and Intelsat S.A. For Consent to Transfer Control of Licenses and Authorizations*, Memorandum Opinion and Order, 40 FCC Rcd 4919, 4930 ¶ 25 (SB/WTB/OET July 11, 2025) ("*SES/Intelsat Order*").

[14] Comments of SES Americom, Inc. at 7-8, 16-17.

[15] *See Ex Parte* Letter from Dorothy B. Reimold, Vice President, Civil Aviation, Aerospace Industries Association, *et al.* to Marlene H. Dortch, Secretary, FCC, WT Docket No. 25-59 (filed Oct. 2, 2025); *see also* Comments of Garmin International, Inc. at 5-9 (assuming a reallocation of the 3980-4160 MHz band—or 180 megahertz in total—when assessing various technical parameters for terrestrial wireless coexistence with next-generation RAs).

[16] Comments of Verizon at 11 (*citing SES/Intelsat Order*, 40 FCC Rcd at 4933 ¶ 34).

[17] *See* Comments of CTIA at 14; Comments of T-Mobile USA, Inc. at 2-3.

Further, commenters showed that existing FSS operators can use C-band resources more efficiently by, for example, "'transition[ing] to higher compression [High Efficiency Video Coding] technology, which has been shown to reduce the required bit rate for the same video quality by 50% or more.'"[18] Ericsson agrees, and urges the Commission to continue to support the use of efficiency-enhancing mechanisms to make better use of the remaining FSS portion of the Upper C-band.

Notably, SES is on record with a plan that would repurpose 160 megahertz for terrestrial wireless use (plus a 20 megahertz guard band) and "ensure[s] that C-band customers can continue to enjoy substantially the same service following the transition . . . ."[19] The plan involves a combination of remaining Upper C-band spectrum and Ku-band spectrum, along with deployment of a terrestrial recovery network for Ku-band operations in some regions.[20] SES described use of mitigation techniques such as lower modulation and coding schemes, combined C-/Ku-band satellites, and other techniques to provide the same quality and availability of service as provisioned using C-band spectrum regardless of weather conditions.[21] Other stakeholders, including satellite operator Eutelsat, have similarly pointed to Ku-band spectrum as a resource that allows the Commission to repurpose more Upper C-band spectrum.[22]

In addition, the record shows that incumbent earth station operators should be able to transition their operations to fiber connectivity. As CTIA explained (again by way of reference

[18] Comments of Verizon at 11 (*citing SES/Intelsat Order*, 40 FCC Rcd at 4934 ¶ 34).

[19] Comments of SES Americom, Inc. at 7-8.

[20] *Id.* at 10-14.

[21] *Id.*

[22] *See* Comments of Eutelsat Communications S.A. at 9-10; Comments of LinkUp Communications Corp. at 2 (noting that the ATX XDS platform leverages "Ku-Band satellite delivery combined with terrestrial low-latency Internet streaming, giving broadcasters much needed audio redundancy.").

to the agency's *SES/Intelsat Order*), fiber is well within reach for most earth station locations, with Broadband Data Collection data showing that nearly 65% of earth stations are within 200 meters of a location where gigabit-speed fiber service is available, and nearly 94% of earth stations are within one mile of such a location.[23] And this is based on current data, without consideration of the future proliferation of fiber networks as a result of broadband infrastructure funding programs such as the Broadband Equity, Access, and Deployment (BEAD) program. Moreover, several IP-based technologies are also available to existing C-band users.[24]

Taken together, commenters have shown that FSS users can enjoy substantially the same service they have today, given new technologies and alternative transmission methods.[25]

IV. COMMENTERS BROADLY SUPPORT COOPERATIVE EFFORTS BETWEEN THE FCC AND FAA, AND ACROSS INDUSTRY SECTORS, TO ENSURE WIRELESS-RADIO ALTIMETER COEXISTENCE.

The FCC and FAA appear generally aligned on the guiding principles for reallocating Upper C-band spectrum for terrestrial wireless use. The FAA, in its parallel NPRM on next-generation RAs, has announced its intent to effectuate the transition of RAs on priority aircraft on the same timeline as the FCC authorizes the initiation of wireless services in the Upper C-band.[26] Ericsson firmly supports such action and urges the FCC and the FAA, in tandem with wireless and aviation stakeholders, to pursue a coordinated approach that will enable wireless access to Upper C-band spectrum as quickly as possible.

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[23] Comments of CTIA at 10-11 (*citing SES/Intelsat Order*, 40 FCC Rcd at 4931-32 ¶ 30).

[24] *See generally* Comments of LTN Global Communications, Inc.; Comments of Synamedia Ltd; Comments of Zixi LLC.

[25] *See, e.g.,* Comments of SES Americom, Inc. at 4.

[26] *Requirements for Interference-Tolerant Radio Altimeter Systems*, Notice of Proposed Rulemaking, 91 Fed. Reg. 459, 467 (Jan. 7, 2026) ("Radio Altimeter Systems NPRM") ("The initial RA performance deadline is proposed to coincide with FCC's date authorizing the initiation of new wireless services in the Upper C-band.").

Sound engineering data must inform any wireless-RA coexistence policies the FCC and/or the FAA ultimately adopt. As CTIA recently noted, the wireless and aviation industries have made significant progress towards implementing improved RA performance standards on a timeline that aligns with the FCC's efforts to repurpose additional Upper C-band spectrum.[27] However, Ericsson shares CTIA's concerns that FAA and RA stakeholders may be assuming overly conservative modeling parameters when attempting to assess coexistence potential between 5G systems and RAs.[28] The FAA and other RA stakeholders could benefit from FCC technical guidance as to modeling best practices and reasonable input parameters. Ericsson believes that the FAA has significant room to simplify evaluation models without compromising reliability or safety of life, thereby ensuring a much quicker go-to-market prospect for the mobile industry. More realistic modeling could include reassessing horizontal minimum separation distances between base stations and radio altimeter receivers, as well as by modeling of aircraft motion during approach, landing and takeoff. Additionally, the aviation industry should work towards agreements that enable acceptable transitional mitigations in areas around airports. It is important that policy does not burden the mobile industry's ability to deploy full-power commercial wireless base station equipment nationwide at the earliest.

Finally, Ericsson agrees with CTIA and others that, given the developments in next-generation RAs, wireless-specific mitigations to protect RAs will not be necessary once the aviation industry completes the retrofitting and transition of existing equipment.[29]

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[27] *See Ex Parte* Letter from Scott K. Bergmann, Senior Vice President, Regulatory Affairs, CTIA to Marlene H. Dortch, Secretary, FCC, WT Docket No. 25-59 at 2 (filed Feb. 4, 2026).

[28] *Id.* at 2-3.

[29] *See* Comments of CTIA at 17; Comments of Qualcomm at 6-7.

V. COMMENTERS CALL FOR A CLEAR AND SPEEDY TIMELINE FOR ACTIONS NECESSARY TO REPURPOSE UPPER C-BAND SPECTRUM AND ENABLE WIRELESS DEPLOYMENTS IN THE BAND.

Successful reallocation and repurposing of the Upper C-band will directly depend upon the timeline by when licensees will gain access to the licensed spectrum. Ericsson wholeheartedly shares CTIA's view that "[i]t is axiomatic that bidders in Commission spectrum auctions need sufficient information to make informed decisions" and that this "underscores the importance of alignment across agencies and industries on not just the auction of Upper C-band spectrum, but access to the spectrum for deployment."[30] The record in this proceeding further demonstrates that the successful creation of a new operating landscape for remaining FSS operations and RAs will depend upon three critical elements: expediency, clarity, and decisiveness.

For incumbent FSS operations, the Commission should establish a specific, up-front transition deadline to provide much-needed certainty for all participants in the Upper C-band repurposing process, as well as help to expedite the benefits of the reallocated spectrum.[31] NTIA has extolled the wisdom of establishing a clear transition deadline, noting that doing so "will provide federal entities that are customers of satellite-based services time to plan transitioning their operations and securing any necessary new equipment or upgrades to existing equipment."[32] Ericsson further agrees with CTIA that "clarity and certainty regarding the transition timeline are essential to informing potential bidder decisions in the Upper C-band

[30] Comments of CTIA at 19-20.

[31] *See, e.g.*, Comments of CTIA at 24; Comments of the National Telecommunications and Information Administration at 9; Comments of Verizon at 12; Comments of Zixi LLC at 3.

[32] Comments of NTIA at 9.

auction."[33] Moreover, as Zixi observes, "[f]ailure to set a specific transition timeline risks fragmenting the market and delaying the wide-spread deployment of new capabilities . . . ."[34]

The *NPRM* establishes solid guideposts for success, building upon valuable lessons learned from the FCC's earlier repurposing of the Lower C-band. Several parties involved in the Lower C-band transition urge the Commission to make revisions based on lessons learned from that process and to incorporate improvements for the Upper C-band transition.[35] For example, Verizon recommended that the FCC clarify that earth stations receiving signal in the band will no longer have an expectation of protection from harmful interference once its space station operator completes its transition.[36] Ericsson encourages the FCC to adapt the Upper C-band transition framework based upon these comments' valuable insights.

VI. THE COMMISSION SHOULD ALIGN THE PART 27 SERVICE AND TECHNICAL RULES ACROSS THE C-BAND SPECTRUM TO CREATE EFFICIENCIES AND EXPEDITE DEPLOYMENTS.

Commenters have explained how aligning the service rules for the Lower and Upper C-band will leverage economies of scale and promote accelerated deployment of the reallocated spectrum once it becomes available for use.

The record supports unpaired licenses (consistent with the approach taken for the Lower C-band), which will ensure spectral efficiency while providing flexibility for licensees.[37] Ericsson shares Cisco's assessment that uniform channel bandwidths across the C-band will promote intra-band carrier aggregation in support of advanced use cases and applications as well

[33] Comments of CTIA at 24.

[34] Comments of Zixi LLC at 3.

[35] *See, e.g.*, Comments of AT&T Services, Inc. at 8-9; Comments of CTIA at 23-29; Comments of Verizon at 18-19.

[36] Comments of Verizon at 18.

[37] *See* Comments of CTIA at 30-31; Comments of T-Mobile USA, Inc., at 4; Comments of Verizon at 21.

as allow for efficiency-enhancing spectrum swaps.[38] And a consistent channel block size of 20 megahertz provides multiple benefits, such as reduced latency and faster data transmissions.[39] Ericsson additionally supports efforts to make C-band spectrum available in certain areas outside of the contiguous U.S., such as Hawaii and Puerto Rico, which today do not benefit from mid-band wireless connectivity to the same extent as CONUS users.[40]

The technical rules for the Upper C-band should also track those in the Lower C-band. Importantly, as Eutelsat observes, the technical rules adopted for the Lower C-band were sufficient to ensure that FSS operations continued without disruption in the adjacent band.[41] To that end, existing protections for incumbent FSS earth stations are sufficient and should be applied to whatever stations remain in the portion of the Upper C-band the FCC does not reallocate. Some commenters may claim otherwise but do not offer specific data that existing protections have resulted in harmful interference to incumbent earth stations.[42]

With respect to specific technical rules, the Commission should extend base station power limits that apply to the Lower C-band—this is critical to promoting scale in network production, investment in the spectrum, and the rapid deployment of wireless broadband connectivity.[43] Garmin notes that "based on [its] years of technical leadership in radio altimeter development and production," it "strongly supports" the FCC's proposed base station power

[38] Comments of Cisco Systems, Inc. at 10.

[39] *See, e.g.*, Comments of CTIA at 30; *see also* Comments of AT&T Services, Inc. at 5-6; Comments of Cisco Systems, Inc. at 10; Comments of Nokia at 4; Comments of Qualcomm at 6; Comments of Samsung Electronics America, Inc. at 3; Comments of T-Mobile USA, Inc. at 3-4; Comments of Verizon at 21.

[40] *See* Comments of AT&T Services, Inc. at 4; Comments of CTIA at 14-15; Comments of Verizon at 7.

[41] Comments of Eutelsat Communications S.A. at 6, n.17.

[42] *See e.g.* Comments of National Association of Broadcasters at 9-10; Comments of the North American Spectrum Alliance at 3-5.

[43] *See, e.g.*, Comments of CTIA at 32-33; *see also* Comments of AT&T Services, Inc. at 6-7; Comments of Nokia at 5; Comments of Qualcomm at 6; Comments of Samsung Electronics America, Inc. at 3; Comments of T-Mobile USA, Inc. at 4-5; Comments of Verizon at 23-24.

limits.[44] The antenna height limits, service area boundaries, and other technical rules for the Upper C-band should similarly follow those for the Lower C-band.

Ericsson supports adoption of a baseline out-of-band conducted emission limit of -13 dBm/MHz, the same limit that currently applies to the Lower C-band.[45] We reiterate our support for the use of conducted emissions limits for rules in this band.[46]

We expect that introduction of terrestrial wireless services into the Upper C-band should not require significantly different conclusions on emission levels of new base station equipment. In fact, expected upgrades of RA equipment should be much improved in their ability to reject interference from mobile networks.[47] Ericsson is of course willing to work with other partners in the mobile industry to engage constructively with the aviation industry to reach adequate accommodation of compelling needs around this matter.

VII. CONCLUSION.

With the right rules and polices in place, the Commission can replicate (and potentially improve upon) the winning Lower C-band spectrum auction playbook and reset the U.S. mid-band spectrum pipeline. As the record in this proceeding demonstrates, the fundamental elements of success will involve maximizing the amount of spectrum reallocated and repurposed for terrestrial wireless use, identifying alternative distribution platforms for existing FSS users, creating a transparent and expedient process for enabling access to the repurposed spectrum, and aligning the licensing and technical rules across the Upper and Lower C-band. Also, the

[44] Comments of Garmin International, Inc. at 6.

[45] *NPRM* ¶¶ 58-60.

[46] *See, e.g.*, Comments of Ericsson, GN Docket No. 18-122 at 20 (filed Oct. 29, 2018); Comments of Ericsson, WT Docket No. 19-348 at 12 (filed Nov. 20, 2020).

[47] *See* Radio Altimeter Systems NPRM, 91 Fed. Reg. at 467; Comments of Frank Sanders at 3.

Commission and the FAA should agree on an expedited timeline for RA upgrades so that U.S consumers get access to the Upper C-band as soon as possible.

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